AN ANALYSIS OF FOSSIL FUEL ENERGY CONSUMPTION PATTERNS, CO$_2$ EMISSIONS AND ECONOMIC GROWTH IN NIGERIA
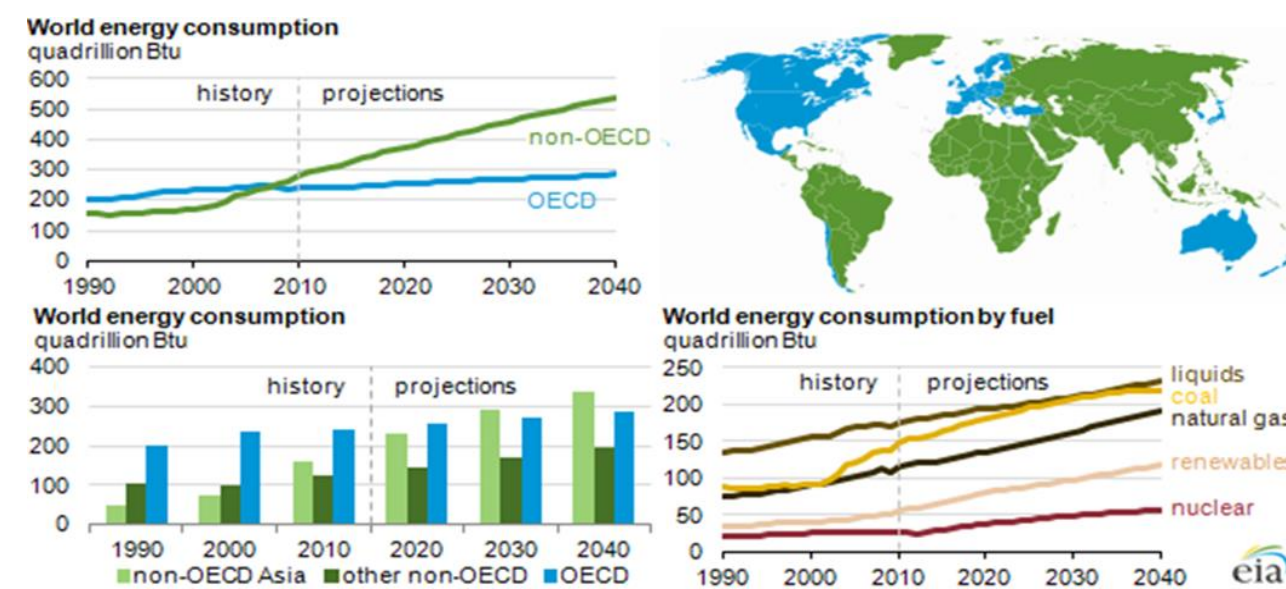
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Introduction

- Energy systems are addressing the insistent global challenges of the 21st century,
- Fossil fuels account for more than 70% of global primary energy consumption,

- Inconsistent electricity supply in Nigeria has resulted in high demand for fossil fuel substitutes

Objective

- To examine the trend in fossil fuel consumption, co$_2$ emissions and economic growth in Nigeria from 1981-2012
- To evaluate the current environmental policies in Nigeria
- To analyse the relationships and effect among fossil fuel consumption, co$_2$ emissions and economic growth in Nigeria

Methodology

- Trend analysis and stationarity test
- Long-run and short-run relationship analysis: co integration test and Vector Auto regression (VAR) analysis (Granger causality and Impulse response functions)

Growth rate trend of gdp, ffc and co2 from 1981- 2012
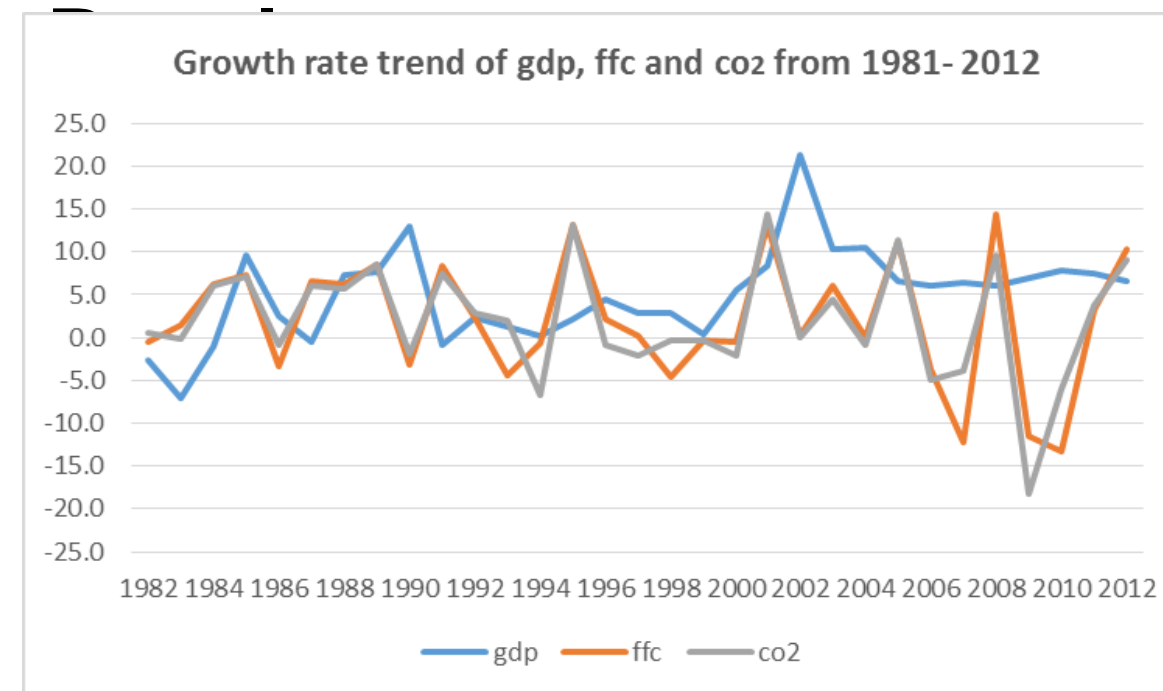
- The growth pattern of fossil fuel consumption and carbon dioxide emissions depicts a rise and fall cycle.
- The trend shows that trade and economic activities have affected general consumption as well as initiate certain effects on the environment.
- There was absence of co integration among the variables hence there is no long run relationship in the model

VAR Granger Causality/Block Exogeneity Wald Tests
Sample: 1981 2012
Included observations: 29

Dependent variable: D(LGDP)

Excluded	Chi-sq	df	Prob.
D(LFUEL)	3.412902	2	0.1815
D(LCO2)	2.692723	2	0.2602
All	7.792643	4	0.0995

Dependent variable: D(LFUEL)

Excluded	Chi-sq	df	Prob.
D(LGDP)	0.803183	2	0.6693
D(LCO2)	1.824499	2	0.4016
All	2.825925	4	0.5874

Dependent variable: D(LCO2)

Excluded	Chi-sq	df	Prob.
D(LGDP)	0.808403	2	0.6675
D(LFUEL)	0.724609	2	0.6961
All	1.602088	4	0.8084

Table 4.5: Granger causality test
Source: Author's compilation (2015)

- There was one presence of granger causality
- Economic growth can be used to predict and explain fossil fuel consumption and co2 emissions together but not as lone variables

Conclusion

- Fossil fuel consumption increase is affected by economic growth
- Nigerian government should tackle the current setback of irregular power supply in the country to reduce the consistent dependence on fossil fueled powered generators in order to boost environmental quality.
- Education of the general public on measures of energy conservation and efficiency
- Renewable energy use should be encouraged tot diversify energy supply

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